

Notice of Allowability

Application No.

10/666,903

Applicant(s)

O'CONNOR ET AL.

Examiner

Janet L. Coppins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicants' Amendment of 11/18/04.
2. ☒ The allowed claim(s) is/are 1-6,8-15,17-25 and 28.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

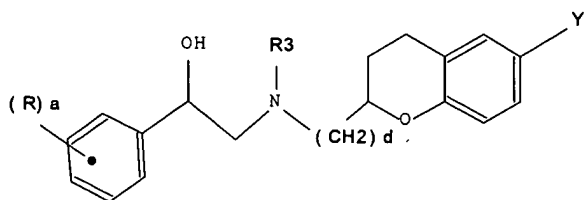
- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Claims 1-6, 8-15, 17-25, and 28 pending in the instant application.

Response to Amendment

1. Applicants had previously elected Group I, claims 1-30, drawn to compounds and their pharmaceutical compositions, methods of preparation and methods of use, according to formula (I), wherein Ar is phenyl:



The Examiner notes with appreciation the cancellation of the non-elected subject matter from the claims.

Claim Rejections - 35 USC § 112

2. Claims 7 and 16 previously rejected under 35 U.S.C. 112, first paragraph, as being reach-through claims. In view of the cancellations of said claims, the Examiner withdraws the rejections to the claims.

Claim Rejections - 35 USC § 101

3. Claims 7 and 16 previously rejected under 35 U.S.C. 101 as being reach-through claims. In view of Applicants' cancellations, the Examiner withdraws the rejections.

Claim Objections

4. Claims 26, 27, 29, and 30 previously objected to as being substantial duplicates. Applicants have cancelled the claims, therefor the Examiner withdraws the objections.

Allowable Subject Matter

5. In view of the Applicants' amendatory changes and cancellations, claims 1-6, 8-15, 17-25, and 28 are allowable, as newly renumbered claims 1-24. The following is an examiner's statement of reasons for allowance:

This invention relates to novel substituted chroman compounds and derivatives, pharmaceutical compositions, and methods of using said compounds as agonists of the beta-3 adrenoreceptor. The instant application is a continuation of U.S. Application No. 10/131,448, which has been found allowable and is now U.S. Pat. No. 6,660,752. The allowable compounds in this case are limited to compounds according to Formula (I) of claims 1-6, wherein Ar is phenyl, and the allowable methods are limited to a methods of using said compounds or pharmaceutical compositions to treat beta-3 adrenoreceptor-mediated conditions, of method claims 8-15 and 17-24. Certain chroman derivatives are known in the art as being effective beta-3 adrenoreceptor agonists, and are also useful for lowering triglyceride and cholesterol levels, effective for treating patients suffering from physiological conditions such as hyperglycemia, obesity, hypertriglyceridemia, hypercholesterolemia, impaired glucose tolerance, cardiovascular conditions, ocular hypertension, glaucoma, urinary disorders, and prostate disease. However the aspect of preparing the instant claimed beta-3 agonists, which contains a central phenyl-hydroxy-amine moiety linked to a substituted chroman ring, is novel and unobvious. After a thorough search, the closest of prior art, Connell et al, US 6,469,031 was found to teach similar carboxyl substituted chroman derivatives as beta-3 adrenoreceptor agonists (please see Examples 20-26). However the compounds of the instant application contain a "Y" substituent in the 4-position of the chroman ring, which may represent halogen, nitro, sulfonyl, an amide, etc., while the compounds of the '031 reference may only contain a carboxyl group on the

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chroman ring, which distinguishes them from the instant application. Connell et al also do not teach or render obvious the instant claimed chroman derivatives as beta-3 agonists for the treatment of impaired glucose tolerance, gastrointestinal disorders, hypertriglyceridemia, urinary disorders, etc. Therefore, the prior art does not fairly suggest the instant claimed pyridyl-amine-chroman compounds, or methods of using them. Support for beta-3 adrenergic receptor agonists' efficacy for lowering high-density lipoprotein levels, as well as treating obesity, diabetes, hypertriglyceridemia, gastrointestinal disorders, etc. can be found in the attached articles, for example the Iatropoulos et al abstract, the Cederberg et al abstract, the Manraj et al abstract, the Proenza et al abstract, and the JP 08-198866 abstract.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Telephone Inquiry

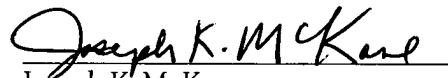
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Coppins whose telephone number is 571.272.0680. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on 571.272.0699. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Janet L. Coppins
February 5, 2005


Joseph K. McKane
SPE, Art Unit 1626